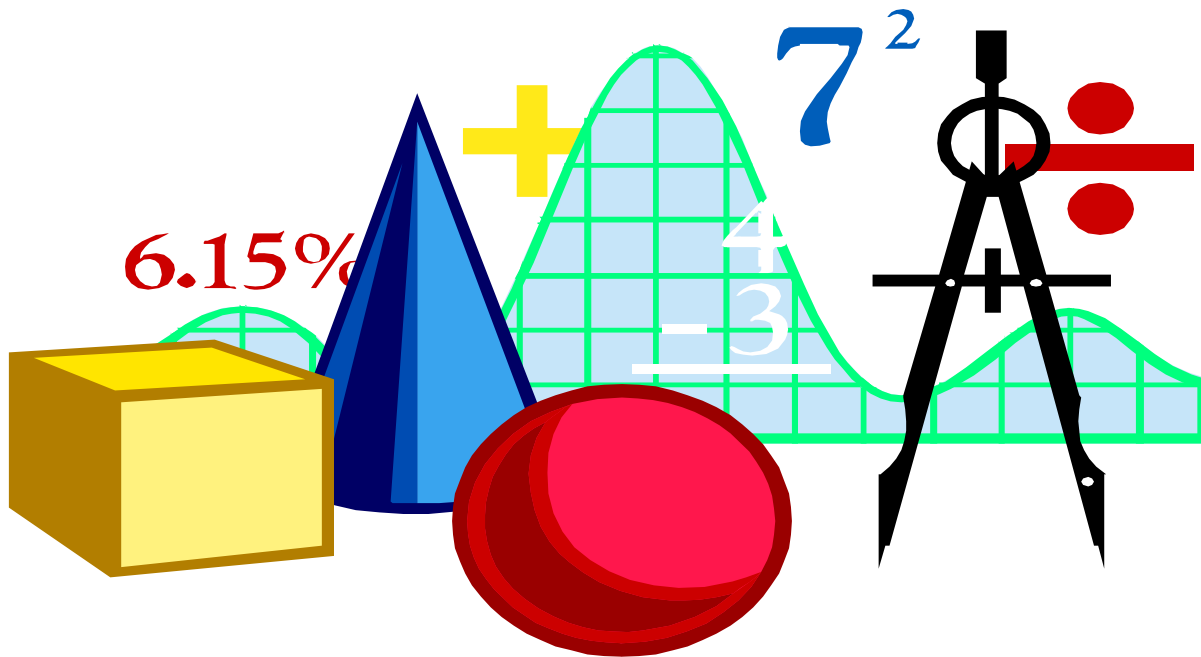


Probabilistic Risk Assessment for High Power Lasers



Dr. David Erwin

Director, 311th HSW/IERA

Brooks AFB, Texas

IERA

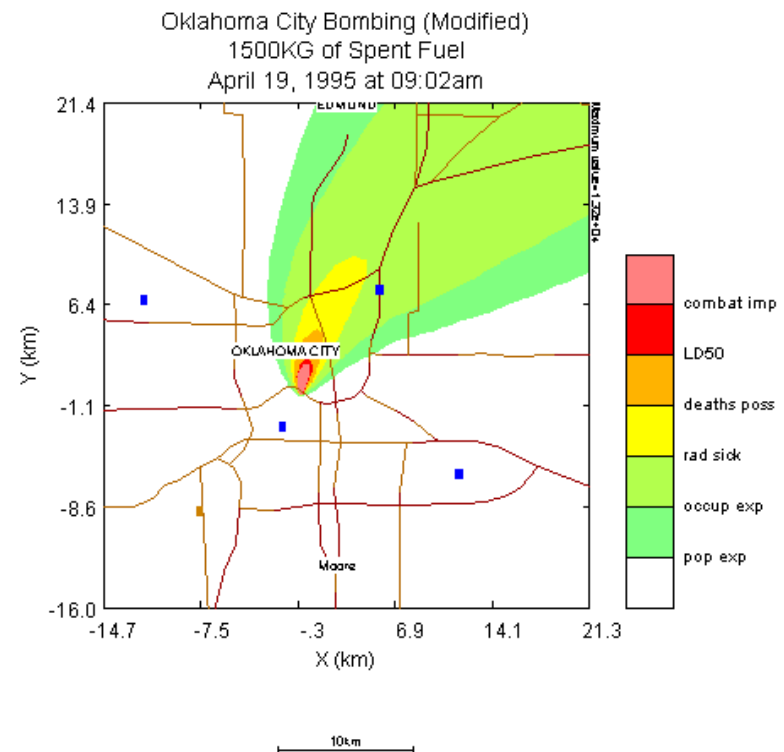
Mission Statement

*“To enhance mission effectiveness,
protect health, improve readiness,
and
reduce costs through the
assessment and
management of risks to human
health
and safety, operational
performance,
and the environment.”*



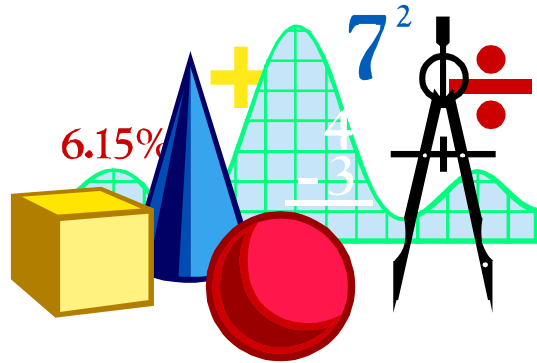
Radiation Surveillance Division

- Force Protection for incidents/accidents involving radioactive material
- Measures occupational & environmental ionizing/non-ionizing radiation & evaluates personnel doses

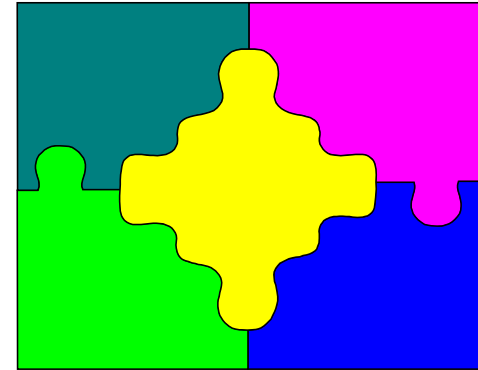


- Estimates human health risks posed by radiation
- Manage AF generated radiation waste

The Big Process

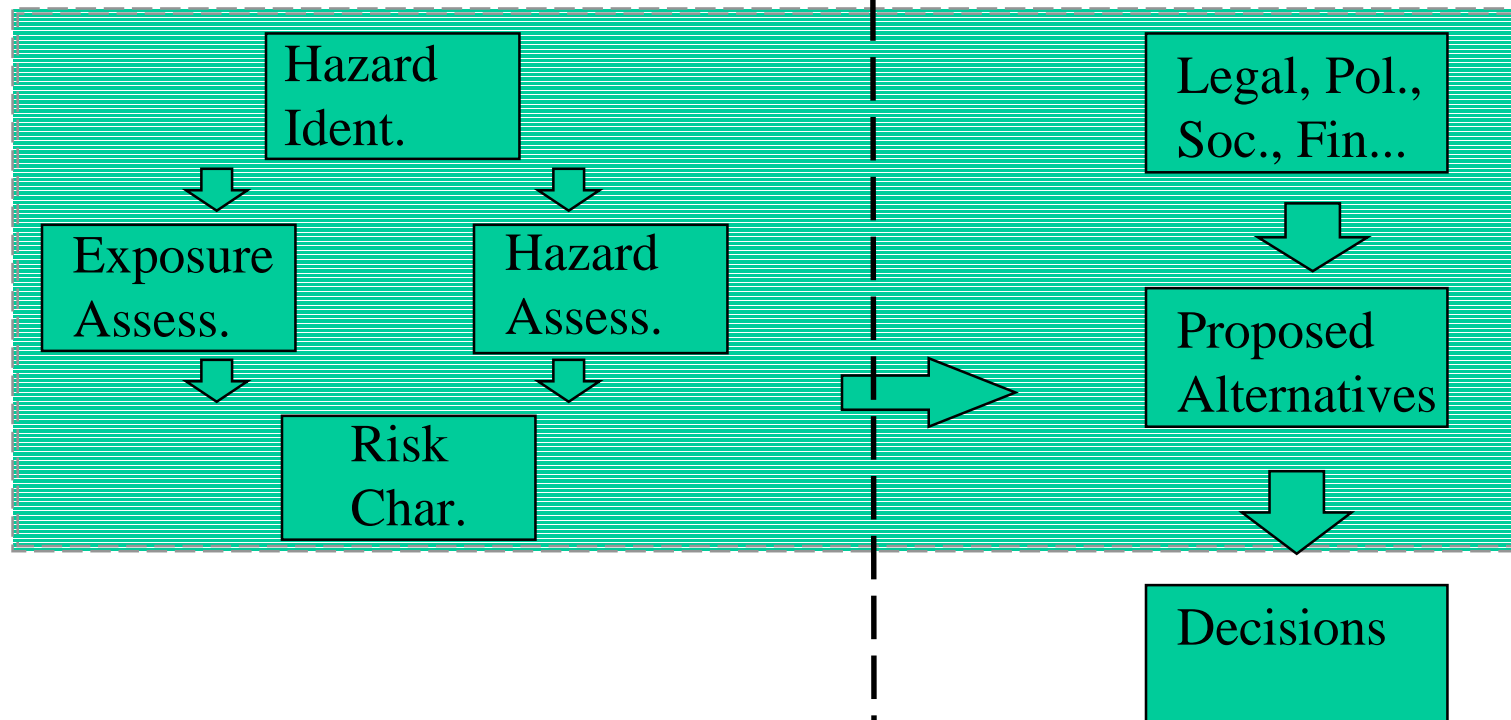


Key Sub-Processes



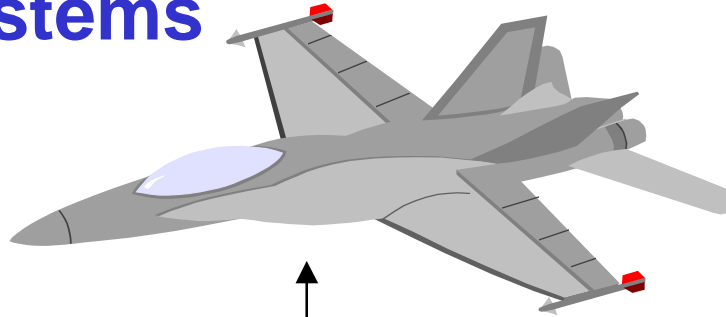
Risk Assessment

Risk Management

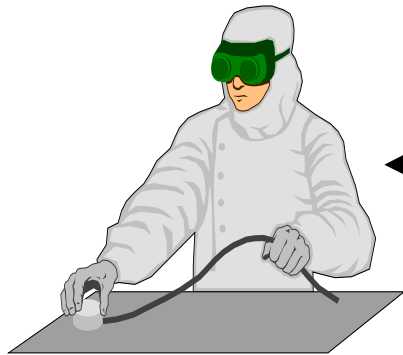


Safety

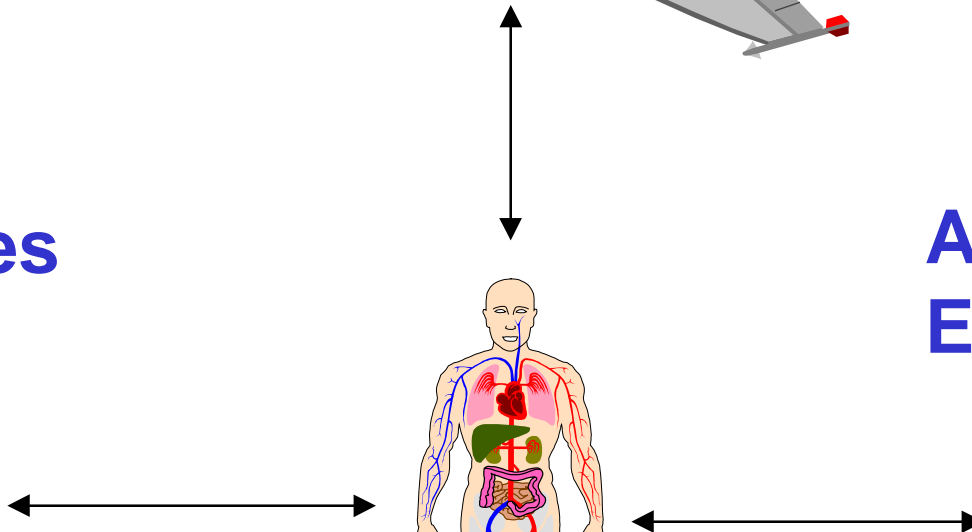
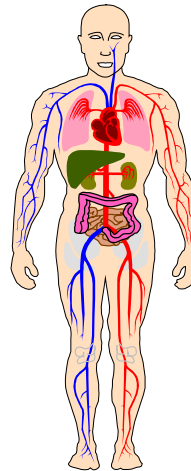
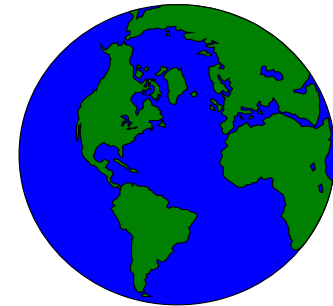
Weapon Systems



**Industrial
Processes**

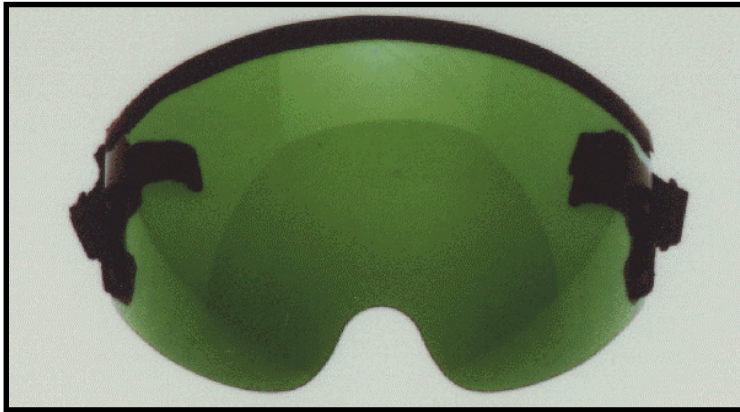


**Ambient
Environment**

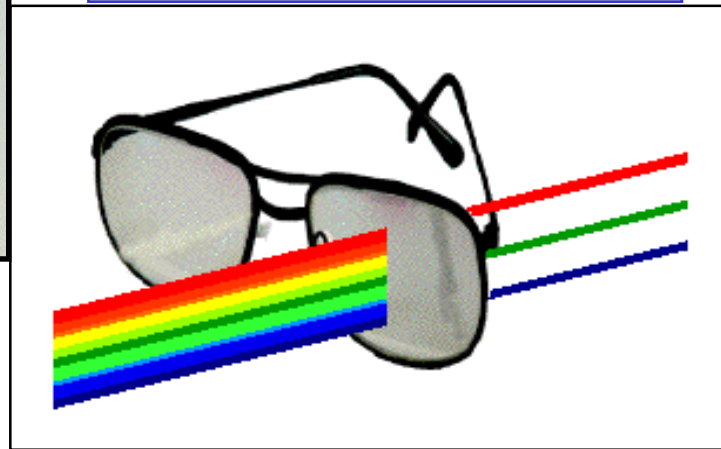


Advantage: Lower Power Effects Well Known

FV-6MR Dye-Based Visor

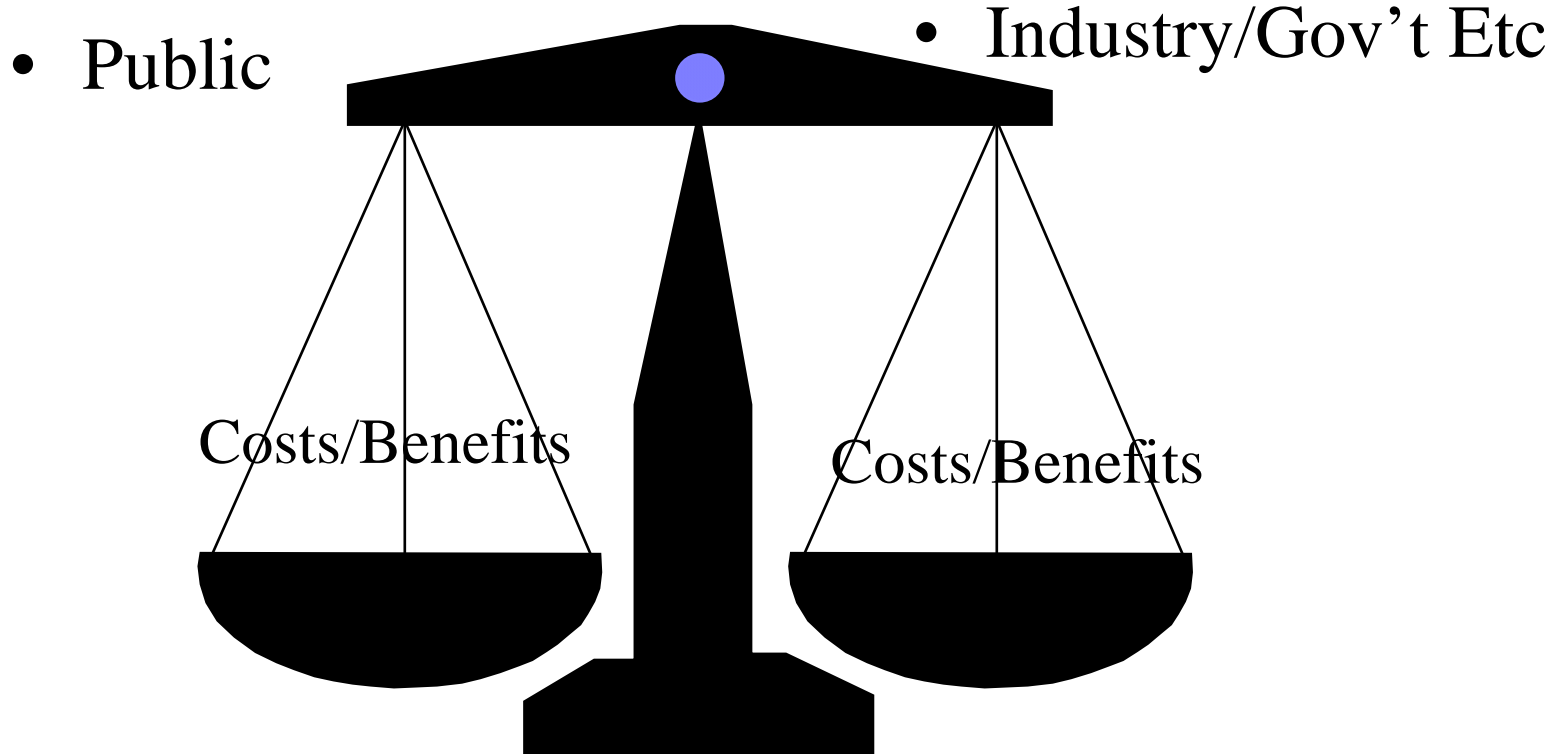


Tri-Stimulus Agile



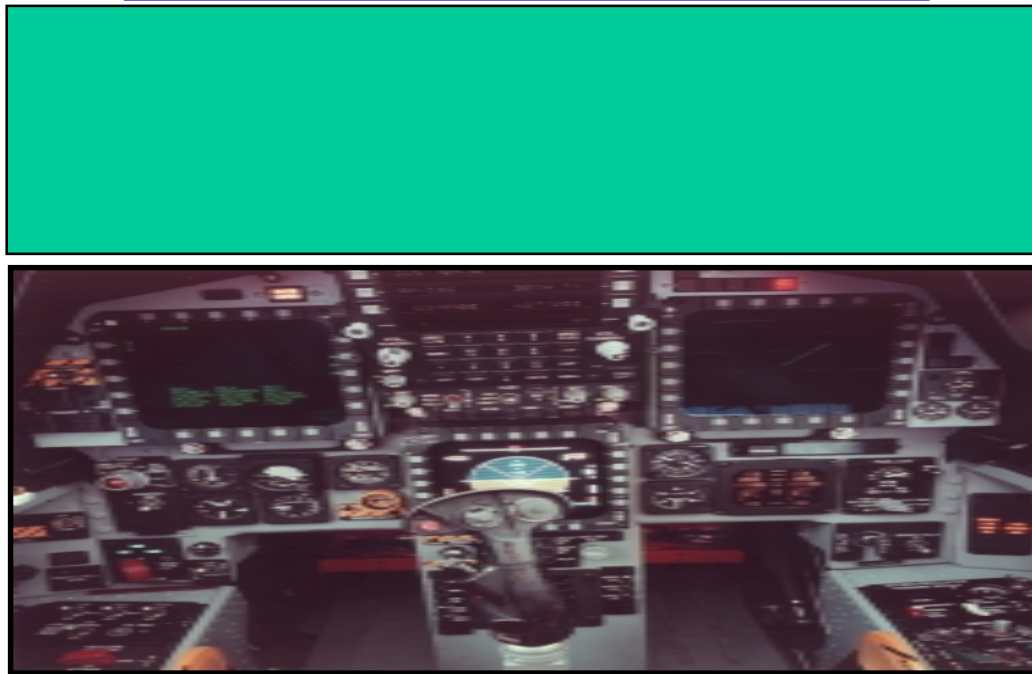
Disadvantage: High Energy Effects Well Known

Public Concerns: Both Health and Justice



Example: Laser Light Shows

View Out Of The Cockpit



FAA and Public Perception: A Potentially Blinding Situation

Example: Cell Phones

ABC 20/20, October 20, 1999

No conclusive proof of safety

Can't say there is no evidence

Prudence is to avoid exposure

FDA and Public Perception: A Potential Liability Situation

Example: Mistakes

Here Are A Few Things Not To Do

We are condemning your property and there is nothing you can do about it. - Federal official trying to site a radar in the '70s.

Don't fly through the beam, because it might give you cancer. - Federal official justifying aircraft restrictions around a radar.

We don't have anyone here tonight who can answer your questions, so just trust us. - Federal official at a town meeting.

Turn off your bugging devices, they are causing disease in our embassy workers. - U.S. State Department to U.S.S.R.

Public Perception: Government is stupid and unjust.

End on the Positive

Here Are A Few Things To Do

Involve public (private) institutions and individuals in the process.

It's called "building trust."

Find ways to communicate the PRA concept and the science behind it. It's called "building understanding."

Be proactive; be proactive; be proactive. (Like the three laws of real estate.)

It's called: "ahead of the power curve." "not playing catchup" "fustus with the mostus"

Public Perception Is Often Rock Hard After It First Sets Up

IN SUMMARY

- PRA represents a new inference guideline model with few precedents
 - Necessity is to get all regulatory bodies to agree on the process
- The key may be to distinguish this area from the difficulties of low level exposures
- Leverage the UK example to best advantage

Risk Assessment of Lasers



YOUR CUSTOMERS

- Deployment Surveillance
- Joint Service Regulations
- Rapid Medical Response
- DoD Worldwide Ranges
- The Media and the Public

Example: Cell Phones

NPR, October 19, 1999

Signs on gas pumps warning/prohibiting cell phones

Story tracked to the Internet by reporter

Traced to Shell in Japan and Taiwan

Trace disappears in misunderstanding a fire regulation.

Public Perception: “Ghost Stories” (*which some always believe*)

Questions or Comments???